

Parkinson's disease drug therapies in the clinical trial pipeline: 2020

Supplement 1: Master list

| Therapy Classifications assigned in Pipeline Review<br><i>Table sorted by Phase &amp; Agent; DMT=disease-modifying therapy; ST=symptomatic therapy</i> |                                 |                                 |   |  | Active* Parkinson's disease drug trials in Phase 1, 2, 3 (n=145)<br>trial data: ClinicalTrials.gov, as of January 21, 2020<br><i>*ClinicalTrials.gov "Status" = "Recruiting", "Not yet recruiting", "Active, not recruiting", "Enrolling by invitation"</i> |                                    |   |  |                      |            |                           |                                  |
|--|---------------------------------|---------------------------------|---|--|---|------------------------------------|---|--|----------------------|------------|---------------------------|----------------------------------|
| Agent  | Therapeutic Purpose (DMT or ST) | Therapy Category                | Novel, Repurposed, Reformulation or New Claim | "Approved For" if Repurposed             | Phase   | NCT Number (ClinicalTrials.gov ID) | Title   | Sponsor/Collaborators  | Estimated Enrollment | Start Date | Estimated Completion Date | Estimated Trial Duration (years) |
| Donepezil  | ST (Gait and balance)           | Non-dopaminergic symptom relief | Repurposed                                    | Alzheimer's disease                      | early Phase 1   | NCT03599726                        | Improving Walking Automaticity in Parkinson's Disease: Levodopa or Donepezil  | Oregon Health and Science University Medical Research Foundation, Oregon   | 20                   | Jul 2018   | Jul 2019                  | 1.0                              |
| IPS-NSC cells  | ST (Movement)                   | Cell therapy                    | Novel   |  | early Phase 1   | NCT03815071                        | A Study on the Treatment of Parkinson's Disease With Autologous Neural Stem Cells   | Allife Medical Science and Technology Co., Ltd. The First People's Hospital of Yunnan Province First People's Hospital of Yunnan Province New Kunhua Hospital Henan Provincial Hospital Beijing Hospital | 10                   | Feb 2019   | Feb 2021                  | 2.0                              |
| Methylphenidate & Atomoxetine  | ST (Gait and balance)           | Non-dopaminergic symptom relief | Repurposed                                    | ADHD                                     | early Phase 1   | NCT02879136                        | TAME-PD - Physical Therapy, Atomoxetine and, Methylphenidate, to Enhance Gait and Balance in Parkinson's Disease                              | Shnehal Patel The Cleveland Clinic   | 42                   | Dec 2016   | Dec 2020                  | 4.0                              |
| Saracatinib  | ST (PD psychosis)               | Kinase inhibitor                | Novel   |  | early Phase 1   | NCT03661125                        | SRC Inhibition as a Potential Target for Parkinson's Disease Psychosis  | King's College London AstraZeneca King's College Hospital NHS Trust  | 30                   | Apr 2019   | Sep 2021                  | 2.4                              |
| UDCA (Ursodeoxycholic acid)  | DMT                             | Energy and mitochondria         | Repurposed                                    | Gallstones & primary biliary cholangitis | Phase 1   | NCT02967250                        | Brain Bioenergetics in Parkinson's Disease and Response to Repeated Oral UDCA Treatment   | University of Minnesota  | 20                   | Apr 2020   | Mar 2022                  | 1.9                              |
| AAV2-GDNF  | DMT                             | Neurotrophic factors            | Novel   |  | Phase 1   | NCT01621581                        | AAV2-GDNF for Advanced Parkinson's Disease  | NINDS National Institutes of Health Clinical Center (CC)   | 25                   | May 2012   | Feb 2022                  | 9.7                              |
| AAV2-GDNF  | DMT                             | Neurotrophic factors            | Novel   |  | Phase 1   | NCT04167540                        | GDNF Gene Therapy for Parkinson's Disease   | Brain Neurotherapy Bio, Inc.   | 12                   | Dec 2019   | Jun 2026                  | 6.5                              |
| ABBV-0805  | DMT                             | Immunotherapy                   | Novel   |  | Phase 1   | NCT04127695                        | A Study to Evaluate the Safety and Tolerability of ABBV-0805 in Patients With Parkinson's Disease   | AbbVie   | 32                   | Oct 2019   | Jul 2021                  | 1.7                              |
| anle138b   | DMT                             | Targeting aSN                   | Novel   |  | Phase 1   | NCT04208152                        | A First-in-Human Study of Single and Multiple Doses of anle138b in Healthy Subjects   | MODAG GmbH Quotient Sciences Aptuit (Verona) Srl, an Evotec Company  | 92                   | Dec 2019   | Oct 2020                  | 0.8                              |
| Apomorphine (009-A)  | ST (Movement)                   | Dopaminergic symptom relief     | Reformulation                                 |  | Phase 1   | NCT04157933                        | Staccato Apomorphine Multi-dose PK and PD in Patients With Parkinson's Disease  | Alexza Pharmaceuticals, Inc.   | 32                   | Oct 2019   | Mar 2020                  | 0.4                              |
| BIIB054 (Cinpanemab)   | DMT                             | Immunotherapy                   | Novel   |  | Phase 1   | NCT03716570                        | A Study to Evaluate Safety, Tolerability, Pharmacokinetics, and Pharmacodynamics of BIIB054 in Japanese Participants With Parkinson's Disease | Biogen   | 24                   | Mar 2019   | Aug 2021                  | 2.4                              |
| BIIB094  | DMT                             | Other                           | Novel   |  | Phase 1   | NCT03976349                        | A Study to Evaluate the Safety, Tolerability, and Pharmacokinetics of BIIB094 in Adults With Parkinson's Disease                              | Biogen Ionis Pharmaceuticals, Inc.   | 62                   | Aug 2019   | Jan 2022                  | 2.4                              |
| Buspirone  | ST (LID)                        | Non-dopaminergic symptom relief | Repurposed                                    | Anxiety disorders                        | Phase 1   | NCT02589340                        | Buspirone, in Combination With Amantadine, for the Treatment of Levodopa-induced Dyskinesia   | Oregon Health and Science University Portland VA Medical Center  | 15                   | Jan 2016   | Dec 2019                  | 3.9                              |

|  |                       |                                 |               |  |         |             |   |   |    |          |          |     |
|--|-----------------------|---------------------------------|---------------|--|---------|-------------|---|---|----|----------|----------|-----|
| Cu(II)ATSM                             | DMT                   | Other                           | Repurposed    | PET imaging agent                                      | Phase 1 | NCT03204929 | Dose Escalation Study of Cu(II)ATSM in Parkinson's Disease  | Collaborative Medicinal Development Pty Limited   | 38 | Aug 2017 | Nov 2019 | 2.3 |
| DNL151                                 | DMT                   | Kinase inhibitor                | Novel         |  | Phase 1 | NCT04056689 | Study to Evaluate DNL151 in Subjects With Parkinson's Disease   | Denali Therapeutics Inc.  | 34 | Jul 2019 | Jun 2020 | 0.9 |
| Droxidopa & Midodrine                  | ST (nOH)              | Non-dopaminergic symptom relief | Repurposed    | Neurogenic orthostatic hypotension                     | Phase 1 | NCT02897063 | Effects of Midodrine and Droxidopa on Splanchnic Capacitance in Autonomic Failure   | Vanderbilt University Medical Center  | 34 | Sep 2016 | Aug 2021 | 4.9 |
| ENT-01 (Kenterin)                      | ST (PD dementia)      | Targeting aSN                   | Novel         |  | Phase 1 | NCT03938922 | A Study to Evaluate ENT-01 for the Treatment of Parkinson's Disease Dementia  | Enterin Inc.  | 40 | Jun 2019 | Feb 2020 | 0.7 |
| Exenatide                              | DMT                   | GLP-1 agonist                   | Repurposed    | Type 2 diabetes  | Phase 1 | NCT03456687 | Effects of Exenatide on Motor Function and the Brain  | University of Florida NINDS   | 15 | Jun 2018 | Apr 2021 | 2.8 |
| FB-101                                 | DMT                   | Kinase inhibitor                | Novel         |  | Phase 1 | NCT04165837 | Safety, Tolerability, and Pharmacokinetics of Oral FB-101 in Healthy Subjects   | 1ST Biotherapeutics, Inc.   | 48 | Oct 2019 | Jun 2020 | 0.7 |
| Foliglurax (PXT002331)                 | ST (Movement)         | Non-dopaminergic symptom relief | Novel         |  | Phase 1 | NCT04175132 | Binding of Foliglurax to Regions in the Brain in Healthy Participants and in Patients With Parkinson's Disease (PD)   | H. Lundbeck A/S   | 17 | Nov 2019 | Mar 2020 | 0.3 |
| Infudopa                               | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |  | Phase 1 | NCT03419806 | Study Comparing Intravenous and Subcutaneous Infudopa With Intestinal Duodopa in Patients With Parkinson's Disease  | Vastra Gotaland Region The Swedish Research Council Dizlin Medical Design AB GÅrteborg University | 28 | Feb 2018 | Dec 2018 | 0.8 |
| ISC-hpNSC                              | ST (Movement)         | Cell therapy                    | Novel         |  | Phase 1 | NCT02452723 | A Study to Evaluate the Safety of Neural Stem Cells in Patients With Parkinson's Disease  | Cyto Therapeutics Pty Limited   | 12 | Jul 2016 | Jun 2020 | 3.9 |
| Lu AF82422                             | DMT                   | Immunotherapy                   | Novel         |  | Phase 1 | NCT03611569 | Lu AF82422 in Healthy Non-Japanese and Japanese Subjects and in Patients With Parkinson's Disease   | H. Lundbeck A/S   | 44 | Jul 2018 | Jun 2020 | 1.9 |
| LY03003                                | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |  | Phase 1 | NCT03733561 | A Study to Assess Pharmacokinetic Profiles of LY03003 and Neupro  | Luye Pharma Group Ltd.  | 40 | Nov 2018 | Apr 2019 | 0.5 |
| MEDI1341                               | DMT                   | Immunotherapy                   | Novel         |  | Phase 1 | NCT03272165 | Single Ascending Dose Study of MEDI1341 in Healthy Volunteers   | AstraZeneca Covance MMS Holdings, Inc Catalent  | 48 | Oct 2017 | Nov 2020 | 3.1 |
| Mesenchymal stem cells                 | DMT                   | Cell therapy                    | Novel         |  | Phase 1 | NCT03550183 | Umbilical Cord Derived Mesenchymal Stem Cells Therapy in Parkinson's Disease  | Hebei Newtherapy Bio-Pharma technology Co., Ltd.  | 20 | Jan 2018 | Dec 2022 | 5.0 |
| NBXT-001                               | ST (Movement and NMS) | Other                           | Repurposed    | Xenon approved as general anesthesia, but not NBXT-001 | Phase 1 | NCT04097080 | Comparative Controlled Study of Analgesic, Antiasthenic and Anti-Anxiety Effects of Xenon in Patients With Parkinson's Disease  | Nobilis Therapeutics Inc.   | 60 | Nov 2019 | Dec 2021 | 2.1 |
| Opicapone                              | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |  | Phase 1 | NCT03820037 | Relative Bioavailability and Bioequivalence of Opicapone  | Bial - Portela C.S.A.   | 45 | Mar 2019 | Jun 2019 | 0.3 |
| PRIM-DJ2727                            | DMT                   | Microbiome/GIT                  | Novel         |  | Phase 1 | NCT03671785 | Study of the Fecal Microbiome in Patients With Parkinson's Disease  | The University of Texas Health Science Center, Houston Kelsey Research Foundation                 | 12 | May 2019 | Dec 2020 | 1.6 |
| Sargramostim                           | DMT                   | Other                           | Repurposed    | Bone transplantation stimulator                        | Phase 1 | NCT03790670 | Biomarker Assessments of Leukine During Treatment of Parkinson's Disease  | University of Nebraska  | 5  | Jan 2019 | Dec 2020 | 1.9 |
| SER-214 (Rotigotine polymer conjugate) | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |  | Phase 1 | NCT02579473 | A Study of Weekly Subcutaneous Injections of SER-214 in Subjects With Parkinson's Disease (PD), to Determine the Safety, Tolerability and Pharmacokinetic (PK) Profile of SER-214 | Serina Therapeutics   | 20 | Jan 2016 | Dec 2020 | 5.0 |
| TRANSEURO (hfVM)                       | ST (Movement)         | Cell therapy                    | Novel         |  | Phase 1 | NCT01898390 | TRANSEURO Open Label Transplant Study in Parkinson's Disease  | University of Cambridge Lu  | 40 | May 2012 | Mar 2021 | 8.8 |
| UB-312                                 | DMT                   | Immunotherapy                   | Novel         |  | Phase 1 | NCT04075318 | Study of UB-312 in Healthy Participants and Parkinson's Disease Patients  | United Neuroscience Ltd. Centre for Human Drug Research, Netherlands Worldwide Clinical Trials    | 62 | Aug 2019 | Jun 2021 | 1.8 |

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|--|---------------|---------------------------------|------------|------------|-----------------|-------------|--|--|-----|----------|----------|------|
| VY-AADC01                                    | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1         | NCT01973543 | Safety Study of AADC Gene Therapy (VY-AADC01) for Parkinson's Disease  | Neurocrine Biosciences University of California, San Francisco Veristat, Inc. Feinstein Institute for Medical Research Oregon Health and Science University Voyager Therapeutics | 15  | Oct 2013 | Dec 2019 | 6.2  |
| VY-AADC01                                    | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1         | NCT03065192 | Safety and Efficacy Study of VY-AADC01 for Advanced Parkinson's Disease  | Neurocrine Biosciences Voyager Therapeutics  | 16  | May 2017 | Dec 2021 | 4.6  |
| XC130-A10H                                   | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1         | NCT04043338 | Single Ascending Dose Study Investigating the Safety, Tolerability, and PK of XC130-A10H in Healthy Adult Subjects     | Xoc Pharmaceuticals Celerion   | 40  | Aug 2019 | Jan 2020 | 0.5  |
| Young Plasma infusions                       | DMT           | Other                           | Novel      |            | Phase 1         | NCT02968433 | The Stanford Parkinson's Disease Plasma Study  | Stanford University  | 15  | Nov 2016 | Dec 2019 | 3.1  |
| CDNF (Cerebral Dopamine Neurotrophic Factor) | DMT           | Neurotrophic factors            | Novel      |            | Phase 1 Phase 2 | NCT03775538 | Safety of CDFN by Brain Infusion in Patients With Parkinson's Disease. Extension to HP-CD-CL-2002 Clinical Study       | Herantis Pharma Plc. Renishaw plc.   | 15  | Jul 2018 | Jun 2020 | 2.0  |
| Clarithromycin                               | ST (Movement) | Non-dopaminergic symptom relief | Repurposed | Antibiotic | Phase 1 Phase 2 | NCT03440112 | Modulation of GABA-A Receptors in Parkinson Disease-Clarithromycin Arm   | Nicolaas Bohnen NINDS University of Michigan   | 30  | Jan 2018 | Nov 2021 | 3.8  |
| Fetal Mesencephalic Neuronal Precursor Cells | ST (Movement) | Cell therapy                    | Novel      |            | Phase 1 Phase 2 | NCT01860794 | Evaluation of Safety and Tolerability of Fetal Mesencephalic Dopamine Neuronal Precursor Cells for Parkinson's Disease | Bundang CHA Hospital   | 15  | May 2013 | Apr 2022 | 8.9  |
| IPT803                                       | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1 Phase 2 | NCT03407378 | A Study to Investigate a New Treatment in Patients With Parkinson's Disease  | Tools4Patient  | 110 | Jun 2018 | Feb 2020 | 1.6  |
| Mesenchymal Stem Cells                       | DMT           | cell therapy                    | Novel      |            | Phase 1 Phase 2 | NCT03684122 | Use of Mesenchymal Stem Cells (MSCs) Differentiated Into Neural Stem Cells (NSCs) in People With Parkinson's (PD).     | University of Jordan   | 10  | Jun 2018 | Mar 2020 | 1.8  |
| Neural Precursor Cell transplantation        | ST (Movement) | cell therapy                    | Novel      |            | Phase 1 Phase 2 | NCT03119636 | Safety and Efficacy Study of Human ESC-derived Neural Precursor Cells in the Treatment of Parkinson's Disease          | Chinese Academy of Sciences The First Affiliated Hospital of Zhengzhou University  | 50  | May 2017 | Dec 2020 | 3.6  |
| Neural Stem Cell-Derived Neurons             | ST (Movement) | cell therapy                    | Novel      |            | Phase 1 Phase 2 | NCT03309514 | Transplantation of Neural Stem Cell-Derived Neurons for Parkinson's Disease  | NeuroGeneration  | 12  | Jun 2020 | nau      | 1.1  |
| OXB-102 (AXO-Lenti-PD)                       | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1 Phase 2 | NCT03720418 | Study of OXB-102 (AXO-Lenti-PD) in Patients With Bilateral, Idiopathic Parkinson's Disease                             | Axovant Sciences Ltd. Oxford BioMedica   | 30  | Oct 2018 | Dec 2031 | 13.1 |
| PR001A                                       | DMT           | GBA                             | Novel      |            | Phase 1 Phase 2 | NCT04127578 | Phase 1/2a Clinical Trial of PR001A in Patients With Parkinson's Disease With at Least One GBA1 Mutation (PROPEL)      | Prevail Therapeutics   | 16  | Oct 2019 | Aug 2026 | 6.8  |
| ProSavin                                     | ST (Movement) | Dopaminergic symptom relief     | Novel      |            | Phase 1 Phase 2 | NCT01856439 | Long Term Safety and Efficacy Study of ProSavin in Parkinson's Disease   | Axovant Sciences Ltd. Oxford BioMedica   | 15  | May 2011 | May 2022 | 11.0 |
| Rifaximin                                    | DMT           | Microbiome/GIT                  | Repurposed | Antibiotic | Phase 1 Phase 2 | NCT03575195 | Microbiota Intervention to Change the Response of Parkinson's Disease  | University of California, San Francisco Nova Southeastern University Gateway Institute for Brain Research  | 86  | Jul 2019 | Dec 2020 | 1.4  |
| Rifaximin                                    | DMT           | Microbiome/GIT                  | Repurposed | Antibiotic | Phase 1 Phase 2 | NCT03958708 | Modulation of Gut Microbiota by Rifaximin in PD Patients   | Taipei Medical University Shuang Ho Hospital   | 20  | May 2019 | Dec 2020 | 1.6  |

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|------------------------------------|---------------|---------------------------------|---------------|-------------------------------------|-----------------|-------------|--|---|--------|----------|----------|-----|
| Ropinirole                         | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                                     | Phase 1 Phase 2 | NCT03250117 | Relative Bioavailability Study of Ropinirole Implants in Parkinson's Patients on L-Dopa Switched From Oral Ropinirole                                  | Titan Pharmaceuticals   | 20     | Oct 2017 | Jul 2020 | 2.7 |
| Terazosin                          | DMT           | Other                           | Repurposed    | Hypertension/BPH                    | Phase 1 Phase 2 | NCT03905811 | Terazosin for Parkinson's Disease  | Jordan Schultz University of Iowa   | 20     | Sep 2019 | Jan 2020 | 0.3 |
| Accordion Pill C-D                 | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                                     | Phase 2         | NCT03576638 | Study to Assess Pharmacokinetics of Accordion Pill Carbidopa-Levodopa Compared to Immediate Release Carbidopa-Levodopa in Parkinson's Disease Patients | Intec Pharma Ltd.   | 12     | Jul 2018 | Jan 2019 | 0.5 |
| Ambroxol                           | DMT           | GBA                             | Repurposed    | Respiratory diseases                | Phase 2         | NCT02914366 | Ambroxol as a Treatment for Parkinson's Disease Dementia   | Lawson Health Research Institute Weston Brain Institute University of Western Ontario, Canada London Health Sciences Centre | 75     | Nov 2015 | Dec 2021 | 6.1 |
| Ambroxol                           | DMT           | GBA                             | Repurposed    | Respiratory diseases                | Phase 2         | NCT02941822 | Ambroxol in Disease Modification in Parkinson Disease  | University College, London Cure Parkinson's Trust PRO.MED.CS Praha a.s - Czech Republic                                     | 20     | Dec 2016 | Apr 2018 | 1.3 |
| ANAVEX2-73                         | DMT           | Other                           | Novel         |                                     | Phase 2         | NCT03774459 | ANAVEX2-73 Study in Parkinson's Disease Dementia   | Anavex Life Sciences Corp. Anavex Germany GmbH  | 120    | Jul 2018 | Jul 2020 | 2.1 |
| Autologous Mesenchymal stem cells  | DMT           | Cell therapy                    | Novel         |                                     | Phase 2         | NCT04146519 | Parkinson's Disease Therapy Using Cell Technology  | Belarusian Medical Academy of Post-Graduate Education   | 12     | Jul 2017 | Dec 2019 | 2.5 |
| AV-101 (L-4-chlorokynurenine)      | ST (LID)      | Non-dopaminergic symptom relief | Novel         |                                     | Phase 2         | NCT04147949 | AV-101 (L-4-chlorokynurenine) in Parkinson's Disease Subjects With Levodopa-Induced Dyskinesia   | VistaGen Therapeutics, Inc.   | 20     | Dec 2020 | Apr 2022 | 1.3 |
| BIIB054 (Cinpanemab)               | DMT           | Immunotherapy                   | Novel         |                                     | Phase 2         | NCT03318523 | Evaluating the Safety, Pharmacokinetics, and Pharmacodynamics of BIIB054 in Participants With Parkinson's Disease                                      | Biogen  | 311    | Jan 2018 | Jun 2021 | 3.4 |
| BoNT-A (Botulinum Toxin-A / Botox) | ST (Tremor)   | Non-dopaminergic symptom relief | Repurposed    | Neurotoxin used for pain management | Phase 2         | NCT02427646 | Kinematic-guided BoNT-A Treatment for ET and PD Tremor   | Western University, Canada  | 54     | Oct 2011 | Jun 2020 | 8.7 |
| BoNT-A (Botulinum Toxin-A / Botox) | ST (Tremor)   | Non-dopaminergic symptom relief | Repurposed    | Neurotoxin used for pain management | Phase 2         | NCT02668497 | Kinematic-based BoNT-A Bilateral Upper Limb PD Therapy   | Western University, Canada  | 50     | Mar 2016 | Feb 2021 | 4.9 |
| Bumetanide                         | ST (Movement) | Non-dopaminergic symptom relief | Repurposed    | Diuretic                            | Phase 2         | NCT03899324 | Evaluation of the Efficacy and Safety of Bumetanide in Parkinson's Disease   | B&A Therapeutics  | 40     | Apr 2019 | Aug 2021 | 2.3 |
| Cannabidiol (CBD)                  | ST (Movement) | Non-dopaminergic symptom relief | Repurposed    | Epilepsy                            | Phase 2         | NCT03582137 | A Study of Tolerability and Efficacy of Cannabidiol on Motor Symptoms in Parkinson's Disease   | University of Colorado, Denver Colorado Department of Public Health and Environment   | 75     | Sep 2018 | Jun 2021 | 2.7 |
| Cannabis                           | ST (Pain)     | Non-dopaminergic symptom relief | Repurposed    | MS spasticity                       | Phase 2         | NCT03944447 | Outcomes Mandate National Integration With Cannabis as Medicine  | OMNI Medical Services, LLC  | 100000 | Dec 2018 | Dec 2025 | 7.1 |
| CanniMed (Cannabis Oil)            | ST (Pain)     | Non-dopaminergic symptom relief | Repurposed    | Pain relief                         | Phase 2         | NCT03639064 | Cannabis Oil for Pain in Parkinson's Disease   | University Health Network, Toronto Parkinson Society Canada   | 15     | Dec 2018 | Jul 2020 | 1.6 |
| Carvedilol                         | DMT           | Other                           | Repurposed    | Hypertension                        | Phase 2         | NCT03775096 | Adrenergic Blockers for Cardiac Changes in Early Parkinson's Disease   | Michele Tagliati, MD Cedars-Sinai Medical Center  | 15     | Apr 2019 | Dec 2019 | 0.7 |
| Carvedilol                         | DMT           | Other                           | Repurposed    | Hypertension                        | Phase 2         | NCT04218968 | Cardiac Changes in Early Parkinson's Disease: A Follow up Study  | Cedars-Sinai Medical Center   | 15     | Dec 2019 | Dec 2022 | 3.0 |
| Ceftriaxone                        | DMT           | Other                           | Repurposed    | Antibiotic                          | Phase 2         | NCT03413384 | To Assess the Efficacy and Safety of Ceftriaxone in Patients With Mild to Moderate Parkinson's Disease Dementia  | BrainX Corporation  | 106    | Feb 2019 | Dec 2020 | 1.9 |

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|---|-----------------------|---------------------------------|---------------|---------------------|---------|-------------|---|--|-----|----------|----------|-----|
| Clonidine                               | ST (ICD)              | Non-dopaminergic symptom relief | Repurposed    | Hypertension        | Phase 2 | NCT03552068 | Study of Clonidine Efficacy for the Treatment of Impulse Control Disorders in Parkinson's Disease:  | Hospices Civils de Lyon  | 38  | May 2019 | May 2022 | 3.0 |
| CNM_Au8 (Gold Nanocrystals)             | DMT                   | Energy and mitochondria         | Novel         |                     | Phase 2 | NCT03815916 | 31P-MRS Imaging to Assess the Effects of CNM-Au8 on Impaired Neuronal Redox State in Parkinson's Disease  | Clene Nanomedicine University of Texas Southwestern Medical Center                         | 24  | Jul 2019 | Jul 2020 | 1.0 |
| CTC-413                                 | ST (Movement)         | dopaminergic symptom relief     | Reformulation |                     | Phase 2 | NCT03683225 | A Study to Evaluate in Patients With Parkinsonian Type Disorders  | Chase Therapeutics Corporation   | 24  | Apr 2019 | Mar 2020 | 0.9 |
| CVN424                                  | ST (Movement)         | Non-dopaminergic symptom relief | Novel         |                     | Phase 2 | NCT04191577 | Study of CVN424 in Parkinson's Disease Patients With Motor Fluctuations   | Cerevance Beta, Inc.   | 66  | Dec 2019 | Aug 2020 | 0.7 |
| CX-8998                                 | ST (Tremor)           | Non-dopaminergic symptom relief | Novel         |                     | Phase 2 | NCT03436953 | A Phase 2 Study of CX-8998 in Adults With Tremor Associated With Parkinson's Disease  | Jazz Pharmaceuticals   | 60  | Dec 2019 | Dec 2020 | 1.0 |
| DA-9805                                 | DMT                   | Botanical                       | Novel         |                     | Phase 2 | NCT03189563 | Safety and Efficacy of DA-9805 for Parkinson's Disease  | Dong-A ST Co., Ltd.  | 60  | Feb 2018 | Mar 2019 | 1.1 |
| Deferiprone                             | DMT                   | Antioxidant                     | Repurposed    | Iron reduction      | Phase 2 | NCT02655315 | Conservative Iron Chelation as a Disease-modifying Strategy in Parkinson's Disease  | University Hospital, Lille European Commission ApoPharma                                   | 338 | Feb 2016 | Feb 2021 | 5.0 |
| Donepezil                               | DMT                   | Other                           | Repurposed    | Alzheimer's disease | Phase 2 | NCT02450786 | Effect of Donepezil on Cognition in Parkinson's Disease With Mild Cognitive Impairment (PD-MCI)   | Yonsei University  | 80  | Jun 2015 | Aug 2019 | 4.2 |
| Droxidopa                               | ST (Fatigue)          | Non-dopaminergic symptom relief | New Claim     |                     | Phase 2 | NCT03446807 | Safety and Efficacy of Droxidopa for Fatigue in Patients With Parkinsonism  | Loma Linda University H. Lundbeck A/S  | 32  | Jan 2020 | Jan 2021 | 1.0 |
| Droxidopa                               | ST (nOH)              | Non-dopaminergic symptom relief | New Claim     |                     | Phase 2 | NCT03567447 | Effect of L-Dihydroxyphenylserine (L-DOPS) on Falls in Patients With Neurogenic Orthostatic Hypotension (NOH)   | St. Joseph's Hospital and Medical Center, Phoenix H. Lundbeck A/S Arizona State University | 10  | Aug 2018 | Mar 2020 | 1.5 |
| Droxidopa                               | ST (Gait and balance) | Non-dopaminergic symptom relief | New Claim     |                     | Phase 2 | NCT02812147 | Effect of L-Dihydroxyphenylserine on Locomotion, Postural Stability, and Fall Risk Reduction in Parkinson Disease   | St. Joseph's Hospital and Medical Center, Phoenix Arizona State University, Tempe          | 20  | May 2016 | Jun 2019 | 3.1 |
| ENT-01 (Kenterin)                       | ST (Constipation)     | Targeting aSN                   | Novel         |                     | Phase 2 | NCT03781791 | Orally Administered ENT-01 for Parkinson's Disease-Related Constipation (KARMET)  | Enterin Inc.   | 152 | Dec 2018 | Oct 2020 | 1.8 |
| EPI-589                                 | DMT                   | Energy and mitochondria         | Novel         |                     | Phase 2 | NCT02462603 | Safety and Biomarker Study of EPI-589 in Parkinson's Disease  | Edison Pharmaceuticals Inc   | 44  | Mar 2016 | Dec 2019 | 3.8 |
| Foliglurax (PXT002331)                  | ST (Movement)         | Non-dopaminergic symptom relief | Novel         |                     | Phase 2 | NCT03162874 | Study to Evaluate the Efficacy, Safety and Tolerability of PXT002331 (Foliglurax) in Reducing Motor Complications of Levodopa Therapy in Parkinson Disease's Patients | Prexton Therapeutics   | 165 | Jul 2017 | Oct 2019 | 2.2 |
| Glycopyrrolate                          | ST (Sialorrhoea)      | Non-dopaminergic symptom relief | Repurposed    | Peptic ulcers       | Phase 2 | NCT02382198 | Study of Glycopyrrolate for Moderate-to-severe Sialorrhoea in Parkinson's Disease   | Ottawa Hospital Research Institute   | 28  | Jul 2016 | Dec 2018 | 2.4 |
| GRF6021 JM-010 (Buspirone/Zolmitriptan) | DMT                   | Other                           | Novel         |                     | Phase 2 | NCT03713957 | A Study to Assess the Safety of GRF6021 Infusions in Subjects With Parkinson's Disease and Cognitive Impairment   | Alkahest, Inc. Michael J. Fox Foundation for Parkinson's Research                          | 90  | Nov 2018 | Nov 2020 | 2.0 |
|   | ST (LID)              | Non-dopaminergic symptom relief | Novel         |                     | Phase 2 | NCT03956979 | A Study in Parkinson's Disease in paTients With mOderate to severe dyskinesia   | Contera Pharma Bukwang Pharmaceutical  | 81  | Jul 2019 | Jun 2021 | 1.9 |
| K0706 (SCC - 138)                       | DMT                   | Kinase inhibitor                | Novel         |                     | Phase 2 | NCT03655236 | PROSEK: A Phase 2 Study In Early Parkinson's Disease Patients Evaluating The Safety And Efficacy Of Abl Tyrosine Kinase Inhibition Using K0706                        | Sun Pharma Advanced Research Company Limited   | 504 | Feb 2019 | Feb 2021 | 2.0 |
| KDT-3594                                | ST (Movement)         | Dopaminergic symptom relief     | Novel         |                     | Phase 2 | NCT03845387 | A Clinical Study of KDT-3594 in Patients With Early Parkinson's Disease.  | Kissei Pharmaceutical Co., Ltd.  | 100 | Feb 2019 | Jun 2020 | 1.3 |

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|------------------------------------|-----------------------|---------------------------------|---------------|---|---------|-------------|---|--|-----|----------|----------|-----|
| KW-6356                            | ST (Movement)         | Non-dopaminergic symptom relief | Novel         |   | Phase 2 | NCT03703570 | A Study of KW-6356 in Patients With Parkinson's Disease on Treatment With Levodopa-containing Preparations  | Kyowa Kirin Co., Ltd.  | 502 | Sep 2018 | May 2020 | 1.6 |
| Liraglutide                        | DMT                   | GLP-1 agonist                   | Repurposed    | Type 2 diabetes                                   | Phase 2 | NCT02953665 | Safety and Efficacy of Liraglutide in Parkinson's Disease   | Cedars-Sinai Medical Center The Cure Parkinson's Trust Novo Nordisk A/S  | 57  | Apr 2017 | Dec 2020 | 3.7 |
| Lixisenatide                       | DMT                   | GLP-1 agonist                   | Repurposed    | Type 2 diabetes                                   | Phase 2 | NCT03439943 | Study to Evaluate the Effect of Lixisenatide in Patient With Parkinson's Disease  | University Hospital, Toulouse Cure Parkinson RÃ©seau NS-Park EUCLID Sanofi   | 158 | Jun 2018 | Dec 2021 | 3.5 |
| LY3154207                          | ST (PD dementia)      | Dopaminergic symptom relief     | Novel         |   | Phase 2 | NCT03305809 | A Study of LY3154207 in Participants With Dementia Due to Lewy Body Dementia (LBD) Associated With Idiopathic Parkinson's Disease (PD) or Dementia With Lewy Bodies (DLB)                                     | Eli Lilly and Company  | 340 | Nov 2017 | Jun 2020 | 2.6 |
| Mannitol                           | DMT                   | Targeting aSN                   | Repurposed    | Diuretic and artificial sweetener                 | Phase 2 | NCT03823638 | Safety, Tolerability and Effects of Mannitol in Parkinson's Disease   | Hadassah Medical Organization  | 60  | Nov 2018 | Dec 2020 | 2.1 |
| Metabolic Cofactor Supplementation | DMT                   | Other                           | Repurposed    | Multiple supplements to enhance hepatic oxidation | Phase 2 | NCT04044131 | Metabolic Cofactor Supplementation in Alzheimer's Disease (AD) and Parkinson's Disease (PD) Patients  | Istanbul Medipol University Hospital ScandiBio Therapeutics AB Alanya Alaaddin Keykubat University Sahlgrenska University Hospital, Sweden KTH Royal Institute of Technology | 120 | Sep 2019 | Sep 2020 | 1.0 |
| ND0612                             | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |   | Phase 2 | NCT02726386 | A Clinical Study in Advanced Parkinson's Disease Investigating the Long Term Safety of ND0612 Administered as a Continuous SC Infusion  | NeuroDerm Ltd.   | 210 | May 2016 | Aug 2021 | 5.3 |
| NLY01 (pegylated exenatide)        | DMT                   | GLP-1 agonist                   | Novel         |   | Phase 2 | NCT04154072 | A Clinical Study of NLY01 in Patient's With Early Parkinson's Disease   | Neurally, Inc.   | 240 | Jan 2020 | Apr 2021 | 1.2 |
| NYX-458                            | ST (PD MCI)           | Non-dopaminergic symptom relief | Novel         |   | Phase 2 | NCT04148391 | A Study to Evaluate NYX-458 in Subjects With PD-MCI   | Aptinyx CogState Ltd.  Worldwide Clinical Trials   | 135 | Nov 2019 | Jun 2021 | 1.6 |
| Ondansetron                        | ST (Hallucinations)   | Non-dopaminergic symptom relief | Repurposed    | Nausea and vomiting (antiemetic)                  | Phase 2 | NCT04167813 | Trial of Ondansetron as a Parkinson's HALLucinations Treatment  | University College, London MODEPHARMA Limited PARKINSONS UK PRIMENT SEALED ENVELOPE Waddell Packaging Ltd Custom Pharmaceuticals Limited                                     | 216 | Apr 2020 | Apr 2023 | 3.0 |
| Pimavanserin                       | ST (Neuropsychiatric) | Non-dopaminergic symptom relief | New Claim     |   | Phase 2 | NCT04164758 | Study to Evaluate Safety and Daytime Sedation in Subjects With Parkinson's Disease With Neuropsychiatric Symptoms Treated With Pimavanserin or Low-Dose Quetiapine  | ACADIA Pharmaceuticals Inc.  | 60  | Oct 2019 | Dec 2020 | 1.1 |
| Pimavanserin                       | ST (ICD)              | Non-dopaminergic symptom relief | New Claim     |   | Phase 2 | NCT03947216 | Randomized Placebo Controlled Trial Evaluating the Efficacy of Pimavanserin, a Selective Serotonin 5-Hydroxytryptamine-2A (5HT2A) Inverse Agonist, to Treat Impulse Control Disorders in Parkinson's Disease. | University Hospital, Strasbourg, France NS-PARK EUCLID F-CRIN  | 130 | Sep 2019 | Jan 2022 | 2.3 |
| Prasinezumab (RO7046015/PRX002)    | DMT                   | Immunotherapy                   | Novel         |   | Phase 2 | NCT03100149 | A Study to Evaluate the Efficacy of Prasinezumab (RO7046015/PRX002) in Participants With Early Parkinson's Disease  | Hoffmann-La Roche Prothena Biosciences Limited   | 316 | Jun 2017 | Feb 2021 | 3.6 |

|                                 |                   |                                 |            |  |                 |             |  |   |     |          |          |     |
|---------------------------------|-------------------|---------------------------------|------------|--|-----------------|-------------|--|---|-----|----------|----------|-----|
| Pridopidine                     | ST (LID)          | Non-dopaminergic symptom relief | Novel      |  | Phase 2         | NCT03922711 | A Study to Assess the Safety and Effectiveness of Pridopidine Compared to Placebo in the Treatment of Levodopa-Induced Dyskinesia in Patients With                 | Prilenia  | 135 | Mar 2019 | Apr 2020 | 1.0 |
| Rasagiline                      | DMT               | Other                           | New Claim  |  | Phase 2         | NCT02789020 | Image Parkinson's Disease Progression Study  | University of Florida NINDS   | 116 | Dec 2016 | Dec 2020 | 4.0 |
| Resistant maltodextrin          | ST (NMS)          | Microbiome/GIT                  | Repurposed | Constipation                             | Phase 2         | NCT03667404 | Resistant Maltodextrin for Gut Microbiome in Parkinson's Disease: Safety and Tolerability Study  | Northwestern University University of Illinois at Chicago   | 30  | Nov 2018 | Jun 2020 | 1.6 |
| Semaglutide                     | DMT               | GLP-1 agonist                   | Repurposed | Type 2 diabetes                          | Phase 2         | NCT03659682 | GLP1R in Parkinson's Disease   | Oslo University Hospital  | 120 | Jan 2019 | Dec 2024 | 6.0 |
| SEP-363856                      | ST (PD psychosis) | Non-dopaminergic symptom relief | Novel      |  | Phase 2         | NCT02969369 | A Study to Evaluate the Efficacy, Safety and Tolerability of SEP-363856 in Subjects With Parkinson's Disease Psychosis   | Sunovion  | 36  | Dec 2016 | May 2020 | 3.3 |
| Simvastatin                     | DMT               | Other                           | Repurposed | Hypercholesterolemia                     | Phase 2         | NCT02787590 | Simvastatin as a Neuroprotective Treatment for Moderate Parkinson's Disease  | University Hospital Plymouth NHS Trust University of Plymouth   | 235 | Mar 2016 | May 2020 | 4.1 |
| SOJZ herbal mixtures            | ST (NMS)          | Botanical                       | Novel      |  | Phase 2         | NCT02616120 | Effect of SOJZ Herbal Mixtures on Non-motor Symptoms of Parkinson's Disease  | Dongzhimen Hospital, Beijing  | 240 | Dec 2015 | Dec 2019 | 4.0 |
| THN102 (modafinil/flecainide)   | ST (Sleepiness)   | Non-dopaminergic symptom relief | Repurposed | Sleepiness/anti-arrhythmic               | Phase 2         | NCT03624920 | Safety and Efficacy of THN102 in Patients With Parkinson's Disease and Excessive Daytime Sleepiness  | Theranexus  | 71  | Jul 2018 | Feb 2020 | 1.6 |
| UDCA (Ursodeoxycholic acid)     | DMT               | Energy and mitochondria         | Repurposed | Gallstones & primary biliary cholangitis | Phase 2         | NCT03840005 | Trial of Ursodeoxycholic Acid (UDCA) for Parkinson's Disease: The "UP" Study   | Sheffield Teaching Hospitals NHS Foundation Trust JP Moulton Charitable Foundation PRO.MED.CS Praha a.s. Clinical Trials Research Unit, University of Sheffield | 30  | Dec 2018 | Sep 2020 | 1.7 |
| Venglustat (GZ/SAR402671)       | DMT               | GBA                             | Novel      |  | Phase 2         | NCT02906020 | A Global Study to Assess the Drug Dynamics, Efficacy, and Safety of GZ/SAR402671 in Parkinson's Disease Patients Carrying a Glucocerebrosidase (GBA) Gene Mutation | Genzyme, a Sanofi Company Sanofi  | 270 | Dec 2016 | Feb 2023 | 6.1 |
| VY-AADC02                       | ST (Movement)     | Dopaminergic symptom relief     | Novel      |  | Phase 2         | NCT03562494 | VY-AADC02 for Parkinson's Disease With Motor Fluctuations  | Neurocrine Biosciences Voyager Therapeutics   | 42  | Jun 2018 | Dec 2020 | 2.4 |
| WIN-1001X                       | DMT               | Botanical                       | Novel      |  | Phase 2         | NCT04220762 | A Study to Determine the Dose of WIN-1001X by Evaluating Efficacy and Safety in Early Parkinson's Disease Patients   | Medi Help Line  | 188 | Jan 2020 | Dec 2020 | 0.9 |
| Zolpidem                        | ST (Movement)     | Non-dopaminergic symptom relief | Repurposed | Sleep                                    | Phase 2         | NCT03621046 | Use of Low-dose Zolpidem in Parkinson's Disease  | Aston University University Hospital Birmingham NHS Foundation Trust  | 28  | Aug 2018 | Jan 2020 | 1.4 |
| Ecologic BARRIER849 (Probiotic) | ST (Anxiety)      | Microbiome/GIT                  | Repurposed | Promotes gut health                      | Phase 2 Phase 3 | NCT03968133 | Treating Anxiety in Parkinson's Disease With a Multi-Strain Probiotic  | University of British Columbia The W. Garfield Weston Foundation  | 72  | Sep 2019 | Dec 2020 | 1.3 |
| Fecal microbial transplantation | DMT               | Microbiome/GIT                  | Novel      |  | Phase 2 Phase 3 | NCT03876327 | Fecal Microbiota Transplantation As a Potential Treatment for Parkinson's Disease  | Soroka University Medical Center  | 100 | Aug 2015 | Dec 2019 | 4.4 |
| Hydrogen                        | DMT               | Antioxidant                     | Novel      |  | Phase 2 Phase 3 | NCT03971617 | Clinical Trial to Evaluate the Safety and Tolerability of Hydrogen in Patients With Parkinson's Disease  | Stony Brook University  | 70  | May 2019 | Jul 2022 | 3.1 |

|                                     |               |                                 |               |                 |                 |             |   |   |     |          |          |     |
|-------------------------------------|---------------|---------------------------------|---------------|-----------------|-----------------|-------------|---|---|-----|----------|----------|-----|
| Idebenone                           | DMT           | Other                           | Repurposed    | Alzheimer's     | Phase 2 Phase 3 | NCT04152655 | A Study of Efficacy and Safety of Idebenone vs. Placebo in Prodromal Parkinson Disease  | Second Affiliated Hospital, School of Medicine, Zhejiang University | 180 | Jan 2020 | Jan 2023 | 3.0 |
| PR Oxycodone & Levodopa             | ST (Pain)     | Non-dopaminergic symptom relief | Repurposed    | Pain relief     | Phase 2 Phase 3 | NCT02601586 | Effects of PR Oxycodone and of Levodopa, vs Placebo, on Central Neuropathic Pain in Parkinson's Disease   | University Hospital, Toulouse                                       | 84  | Sep 2016 | Sep 2021 | 5.0 |
| ABBV-951                            | ST (Movement) | Dopaminergic symptom relief     | Novel         |                 | Phase 3         | NCT03781167 | A Study to Evaluate the Safety and Tolerability of ABBV-951 in Subjects With Parkinson's Disease (PD)   | AbbVie  | 130 | Apr 2019 | Mar 2021 | 1.8 |
| Accordion Pill                      | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT02605434 | A Study to Assess the Safety and Efficacy of the of the Gastric-retentive AP-CD/LD in Advanced Parkinson's Patients   | Intec Pharma Ltd.   | 420 | Mar 2016 | Dec 2019 | 3.8 |
| Amprelosetine (TD-9855)             | ST (nOH)      | Non-dopaminergic symptom relief | Novel         |                 | Phase 3         | NCT03750552 | Clinical Effect of Amprelosetine (TD-9855) for Treating snOH in Subjects With Primary Autonomic Failure   | Theravance Biopharma  | 188 | Jan 2019 | Sep 2020 | 1.6 |
| Amprelosetine (TD-9855)             | ST (nOH)      | Non-dopaminergic symptom relief | Novel         |                 | Phase 3         | NCT03829657 | Clinical Effect Durability of Amprelosetine (TD-9855) for Treating snOH in Subjects With Primary Autonomic Failure  | Theravance Biopharma  | 258 | Feb 2019 | Feb 2021 | 1.9 |
| Amprelosetine (TD-9855)             | ST (nOH)      | Non-dopaminergic symptom relief | Novel         |                 | Phase 3         | NCT04095793 | Extension Study of Amprelosetine (TD-9855) for Treating snOH in Subjects With Primary Autonomic Failure   | Theravance Biopharma  | 80  | Sep 2019 | Mar 2025 | 5.5 |
| APL-130277 (Sublingual apomorphine) | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT02542696 | An Open-Label Phase 3 Study to Examine the Long-Term Safety, Tolerability and Efficacy of APL-130277 for the Acute Treatment of "OFF" Episodes in Patients With Parkinson's Disease   | Sunovion  | 226 | Aug 2015 | Mar 2023 | 7.5 |
| APL-130277 (Sublingual apomorphine) | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT03391882 | A Study of an Investigational Drug to See How it Affects the People With Parkinson's Disease Complicated by Motor Fluctuations ("OFF" Episodes) Compared to an Approved Drug Used to Treat People With Parkinson's Disease Complicated by Motor Fluctuations ("OFF" Episodes) | Sunovion  | 106 | Dec 2018 | Oct 2020 | 1.8 |
| Apomorphine (pump)                  | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT02864004 | Apomorphine Pump in Early Stage of Parkinson's Disease (EARLY-PUMP)   | Rennes University Hospital  | 192 | Mar 2017 | Sep 2024 | 7.5 |
| Apomorphine (subcutaneous infusion) | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT02339064 | Infusion of Apomorphine: Long-term Safety Study   | US WorldMeds LLC  | 99  | Feb 2015 | Sep 2021 | 6.6 |
| Buspirone                           | ST (LID)      | Non-dopaminergic symptom relief | Repurposed    | Anti-anxiety    | Phase 3         | NCT02617017 | Buspirone Treatment of Iatrogenic Dyskinesias in Advanced Parkinson's Disease   | Assistance Publique - Hopitaux de Paris                             | 100 | Jun 2016 | Jun 2018 | 2.0 |
| Duodopa (ABT-SLV187)                | ST (NMS)      | Dopaminergic symptom relief     | New Claim     |                 | Phase 3         | NCT02549092 | A Study to Examine the Effect of Levodopa-Carbidopa Intestinal Gel (LCIG) Therapy Relative to That of Optimized Medical Treatment (OMT) on Non-motor Symptoms (NMS) Associated With Advanced Parkinson's Disease (PD)   | AbbVie  | 89  | Sep 2015 | May 2020 | 4.7 |
| Exenatide                           | DMT           | GLP-1 agonist                   | Repurposed    | Type 2 diabetes | Phase 3         | NCT04232969 | Exenatide Once Weekly Over 2 Years as a Potential Disease Modifying Treatment for Parkinson's Disease   | University College, London  | 200 | Jan 2020 | Sep 2023 | 3.7 |
| IPX203                              | ST (Movement) | Dopaminergic symptom relief     | Reformulation |                 | Phase 3         | NCT03877510 | Open Label Extension (OLE) Study of the Safety and Clinical Utility of IPX203 in PD Patients With Motor Fluctuations  | Impax Laboratories, LLC   | 300 | Apr 2019 | Mar 2021 | 2.0 |

|                                   |                       |                                 |               |                                    |         |             |  |  |     |          |          |      |
|-----------------------------------|-----------------------|---------------------------------|---------------|------------------------------------|---------|-------------|--|--|-----|----------|----------|------|
| IPX203                            | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |                                    | Phase 3 | NCT03670953 | A Study to Evaluate the Safety and Efficacy of IPX203 in Parkinson's Disease Patients With Motor Fluctuations  | Impax Laboratories, LLC  | 510 | Nov 2018 | Jul 2020 | 1.7  |
| Levodopa-carbidopa intestinal gel | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |                                    | Phase 3 | NCT00660673 | Open Label Continuation Treatment Study With Levodopa-Carbidopa Intestinal Gel in Advanced PD  | AbbVie (prior sponsor, Abbott) Quintiles, Inc. AbbVie  | 262 | Nov 2009 | Nov 2020 | 11.0 |
| Lingzhi (Ganoderma)               | DMT                   | Botanical                       | Repurposed    | Adjunct to cancer treatment        | Phase 3 | NCT03594656 | Effects of Lingzhi on Disease Progression in Patients With Untreated Early Parkinson's Disease   | Xuanwu Hospital, Beijing   | 288 | Jul 2018 | Dec 2020 | 2.5  |
| Memantine                         | DMT                   | Targeting aSN                   | Repurposed    | Alzheimer's                        | Phase 3 | NCT03858270 | Inhibition of $\beta$ -synuclein Cell-cell Transmission by NMDAR Blocker, Memantine  | Wayne State University   | 50  | Mar 2019 | Jun 2023 | 4.3  |
| Nabilone                          | ST (NMS)              | Non-dopaminergic symptom relief | Repurposed    | Nausea and vomiting (antiemetic)   | Phase 3 | NCT03773796 | Nabilone for Non-motor Symptoms in Parkinson's Disease   | Medical University Innsbruck   | 48  | Aug 2018 | Dec 2020 | 2.3  |
| N-acetylcysteine (NAC)            | ST (ICD)              | Non-dopaminergic symptom relief | Repurposed    | Paracetamol/acetaminophen overdose | Phase 3 | NCT03146130 | Study of the Efficacy of N-acetylcysteine (NAC) on Impulse Control Disorders   | Centre Hospitalier Universitaire, Amiens   | 70  | Jul 2018 | Dec 2019 | 1.5  |
| ND0612                            | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |                                    | Phase 3 | NCT04006210 | A Clinical Trial Investigating the Efficacy, Safety and Tolerability of Continuous Subcutaneous ND0612 Infusion in Comparison to Oral IR-LD/CD in Subjects With Parkinson's Disease Experiencing Motor Fluctuations (BouNDless). | NeuroDerm Ltd.   | 300 | Aug 2019 | Apr 2021 | 1.7  |
| Nortriptyline & Escitalopram      | ST (Depression)       | Non-dopaminergic symptom relief | Repurposed    | Depression                         | Phase 3 | NCT03652870 | Antidepressants Trial in Parkinson's Disease   | University College, London London North West Healthcare NHS Trust King's College London University Hospital Plymouth NHS Trust NHS Lothian | 408 | Nov 2019 | Dec 2022 | 3.1  |
| P2B001                            | ST (Movement)         | Dopaminergic symptom relief     | Reformulation |                                    | Phase 3 | NCT03329508 | A Phase 3 Study With P2B001 in Subjects With Early Parkinson's   | Pharma Two B Ltd.  | 525 | Jan 2018 | Sep 2020 | 2.7  |
| Rivastigmine                      | ST (Gait and balance) | Non-dopaminergic symptom relief | Repurposed    | Alzheimer's                        | Phase 3 | NCT04226248 | CHIEF PD (Cholinesterase Inhibitor to prEvent Falls in Parkinson's Disease)  | University of Bristol Royal United Hospitals Bath NHS Foundation Trust   | 600 | Jan 2020 | Nov 2022 | 2.9  |
| Safinamide                        | ST (Movement)         | Dopaminergic symptom relief     | New Claim     |                                    | Phase 3 | NCT03881371 | A Study to Evaluate the Efficacy and Safety of Safinamide, as add-on Therapy, in Idiopathic Chinese Parkinson's Disease (PD) Patients With Motor Fluctuations Treated With Stable Doses of Levodopa                              | Zambon SpA   | 306 | Aug 2019 | Dec 2020 | 1.3  |
| Safinamide                        | ST (LID)              | Dopaminergic symptom relief     | New Claim     |                                    | Phase 3 | NCT03987750 | Safinamide for Levodopa-induced Dyskinesia (PD-LID)  | Zambon SpA   | 300 | Oct 2019 | May 2021 | 1.6  |
| Solifenacin                       | ST (Urinary)          | Non-dopaminergic symptom relief | Reformulation |                                    | Phase 3 | NCT03149809 | Behavioral or Solifenacin Therapy for Urinary Symptoms in Parkinson Disease  | VA Office of Research and Development  | 90  | Mar 2018 | Dec 2021 | 3.8  |
| Tavapadon (PF-06649751)           | ST (Movement)         | Dopaminergic symptom relief     | Novel         |                                    | Phase 3 | NCT04201093 | Fixed-Dose Trial in Early Parkinson's Disease (PD)   | Cerevel Therapeutics, LLC  | 522 | Dec 2019 | Oct 2022 | 2.9  |
| Tavapadon (PF-06649751)           | ST (Movement)         | Dopaminergic symptom relief     | Novel         |                                    | Phase 3 | NCT04223193 | Flexible-Dose Trial in Early Parkinson's Disease (PD)  | Cerevel Therapeutics, LLC  | 296 | Jan 2020 | Nov 2022 | 2.9  |

**Symptom Abbreviations**

ICD = Impulse control disorders; LID = Levodopa-induced dyskinesia; MCI = Mild cognitive impairment; NMS = Non-motor symptoms; nOH = Neurogenic orthostatic hypotension